

Date: Monday, 6/5/2006 7:28:47 AM  
 User: Linda Lacelle

## Process Sheet

<b>Customer</b> :	CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> :	HIGH AFT X-TUBE 412
<b>Job Number</b> :	27388		
<b>Estimate Number</b> :	10559		
<b>P.O. Number</b> :	N/A	<b>Part Number</b> :	D412664203
<b>This Issue</b> :	6/5/2006	<b>S.O. No.</b> :	N/A
<b>Prsht Rev.</b> :	NC	<b>Drawing Number</b> :	D412-664-243 REV B
<b>First Issue</b> :	N/A	<b>Project Number</b> :	N/A
<b>Previous Run</b> :	27263	<b>Drawing Revision</b> :	B
	<b>Type</b> :	<b>Material</b> :	N/A
	LANDING GEAR	<b>Due Date</b> :	6/30/2006
<b>Written By</b> :		<b>Qty:</b>	1 Um: Each
<b>Checked &amp; Approved By</b> :			
<b>Comment</b> :	Est Rev:E 04.02.16 Reformat; Added D3189-1 K/DS Est Rev:F 06-03-29 Remove Coments on Pick List JLM		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
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Comment: DOCUMENT CONTROL

Photocopy bluefile and create labels as per PPP D412-664-203 CHG 003

KS 06-06-19

2.0	D6009129	Crosstube Material
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D6009-129 Crosstube B.25942

Check OD = 3.500"; ID = 2.250"

BG 06-06-05

1

3.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
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Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand &amp; install plugs DT8534 on both ends as per Folio FA166

2-Turn first side as per Folio FA166

4.0	QC1	INSPECT ALL DIM TO DIM SHEET
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Comment: INSPECT ALL DIM TO DIM SHEET

BG 06-06-05

Dart Aerospace Ltd.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

NOTE: Date &amp; initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 27388

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA166

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243.

3-Polish entire outside surface of crosstube

4- Remove sand and plugs

5-Scribe part # and batch # using vibrating stylus as per Dwg D412-664-243

36 06.06.05

6.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

36 06.06.05

7.0

QC8

SECOND CHECK



Comment: SECOND CHECK

36 06/06/05

8.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

47 06-06-08

9.0

QC3/5

INSPECT WORK/WING WALK



Comment: Inspect work & Chemical conversion Coat

BENDING MACHINE

10.0

BENDING



Comment: BENDING MACHINE

Bend tube as per Dwg D412-664-243 using CNC bender program 412-af and Folio FT010

DIMENSIONAL CHECK

11.0

QC6



Comment: DIMENSIONAL CHECK

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Date: Monday, 6/5/2006 7:28:47 AM  
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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 27388

Part Number: D412664203

Job Number:



Seq. #:	Machine Or Operation:	Description :
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12.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

1-Drill pilot holes in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551

*pm' 06-09-06*

2-Ream hole to finish size in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.

*pm' 06-09-06*

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243

*pm' 06-9-14*

13.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
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Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

*pm' 06-9-18*

14.0	QC5	INSPECT WORK TO CURRENT STEP
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Comment: INSPECT WORK TO CURRENT STEP

*DP 6-9-18*

15.0	OUTSIDE SERVICE	OUTSIDE SERVICES
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Comment: Sub-Contracting OUTSIDE SERVICES

Liquid Penetrant Inspection as per QSI 038 Or

Issue P/O: 2059 LPI as per ASTM 1417

Level 2 Attach copy of NDT results to work order

*C Led 09/18*

16.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Inspect for transit damage

Ensure copy of NDT results attached to work order.

*P 11/6/9/22*

17.0	QC6	DIMENSIONAL CHECK
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Comment: Inspect for damage & ensure results are as per Dwg D412-664-203

*pm' 06-09-25*

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Date: Monday, 6/5/2006 7:28:48 AM  
User: Linda Lacelle

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: HIGH AFT X-TUBE 412

Job Number: 27388

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

18.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside and outside crosstube as per QSI 005 4.2

FL 06 09 25 (1)  
ML 06 09 25 (1)

2-Paint outside crosstube with White Imron as per QSI 005 4.2

19.0

QC14

Inspect Spray Paint



Comment: Inspect Spray Paint

Wrap in plastic bag to protect from scratches

06-09-26 (1)

20.0

D2856600

Abrasion Strip



Comment: Qty.: 1.7640 f(s)/Unit Total: 1.7640 f(s)

Pick:

Qty Part number Description Batch

2 D2856-600(Cut to 10.090") Abrasion Strip

624328

RT 06 09 28

21.0

D2856600

Abrasion Strip



Comment: Qty.: 1.0080 f(s)/Unit Total: 1.0080 f(s)

Pick:

Qty Part number Description Batch

1 D2856-600(Cut to 10.870") Abrasion Strip

624328

RT 06-09-28

22.0

D28961

Support



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D2896-1 Support

624683

RT 06-09-28

23.0

D31891

Chafing Shield



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 D3189-1 Chafing Shield

27190

RT 06-09-28

W/O:		WORK ORDER CHANGES					
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Customer: CU-DAR001 Dart Helicopters Services

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Job Number: 27388

Part Number: D412664203

Job Number:



Seq. #:

Machine Or Operation:

Description :

24.0

MS2192028

Clamp(per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part number Description Batch

4 MS21920-28

Clamp

M101684

8T

06-09-28

25.0

MS2192030

clamp(per MIL-DTL-8783C)



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 MS21920-30

Clamp

M101568

IT

06-09-28

26.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Assemble as per Dwg D412-664-203

8T

06-09-28

27.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

DP

6-9-28

28.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

29.0

AN640A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch:

M101129 3m

M101697x1

30.0

AN641A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch:

M101418

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

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Date: Monday, 6/5/2006 7:28:48 AM  
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## Process Sheet

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Job Number: 27388

Part Number: D412664203

Job Number:



Seq. #:	Machine Or Operation:	Description :
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31.0	AN960JD616	Washer
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Comment: Qty.: 18.0000 Each(s)/Unit Total : 18.0000 Each(s)

Washer

Batch: M101697 ✓

32.0	MS21042L6	Nut
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Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)

Nut

Batch: M100151 ✓

PCY/9/29 (1)

33.0	QC4	INSPECT 100% KITS FOR COMPLETENESS
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Comment: INSPECT 100% KITS FOR COMPLETENESS

1506/10/02 (1)

06/10/02 (1)

34.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D412-664-203

Location:

PPP Rev: D

1506/10/02 (1)

35.0	DC	DOCUMENT CONTROL
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Comment: DOCUMENT CONTROL

Inspection Level 21

06/10/03 (1)

Job Completion



u 8/2/03

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 27388
<b>Description:</b> Crosstube Assembly (412 High Aft)		<b>Part Number:</b> D412-664-243
<b>Inspection Dwg:</b> D412-664-243 Rev: B		Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.684	+0.005/-0.000	2.687	✓			
	2.748	+0.005/-0.000	2.752	✓			
	2.884	+0.005/-0.000	2.887	✓			
	3.019	+0.005/-0.000	3.022	✓			
	3.163	+0.005/-0.000	3.167	✓			
	3.308	+0.005/-0.000	3.312	✓			
	3.429	+0.005/-0.000	3.432	✓			
	2.990	+0.005/-0.000	2.993	✓			
	2.618	+0.005/-0.000	2.622	✓			
	0.200	+/-0.010	.200	✓			
	R0.063	+/-0.010	.063	✓			
	R0.500	+/-0.010	.500	✓			
	4.971	+/-0.001	4.970	✓			
SIDE B	2.684	+0.005/-0.000	2.687				
	2.748	+0.005/-0.000	2.752				
	2.884	+0.005/-0.000	2.887				
	3.019	+0.005/-0.000	3.021				
	3.163	+0.005/-0.000	3.165				
	3.308	+0.005/-0.000	3.312				
	3.429	+0.005/-0.000	3.432	✓			
	2.990	+0.005/-0.000	2.992	✓			
	2.618	+0.005/-0.000	2.621	✓			
	0.200	+/-0.010	.200	✓			
	R0.063	+/-0.010	.063	✓			
	R0.500	+/-0.010	.500	✓			
	4.971	+/-0.001	4.970	✓			
	124.09	+/-0.020	124.07	✓			Length on min

<b>Measured by:</b> BG	<b>Audited by:</b> J.G	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 06.06.05	<b>Date:</b> 06/06/05	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	04.06.16	New Issue (P/O D412-664-203)	KJ/JLM	
B	06.03.09	Dwg Rev updated	KJ/JLM	

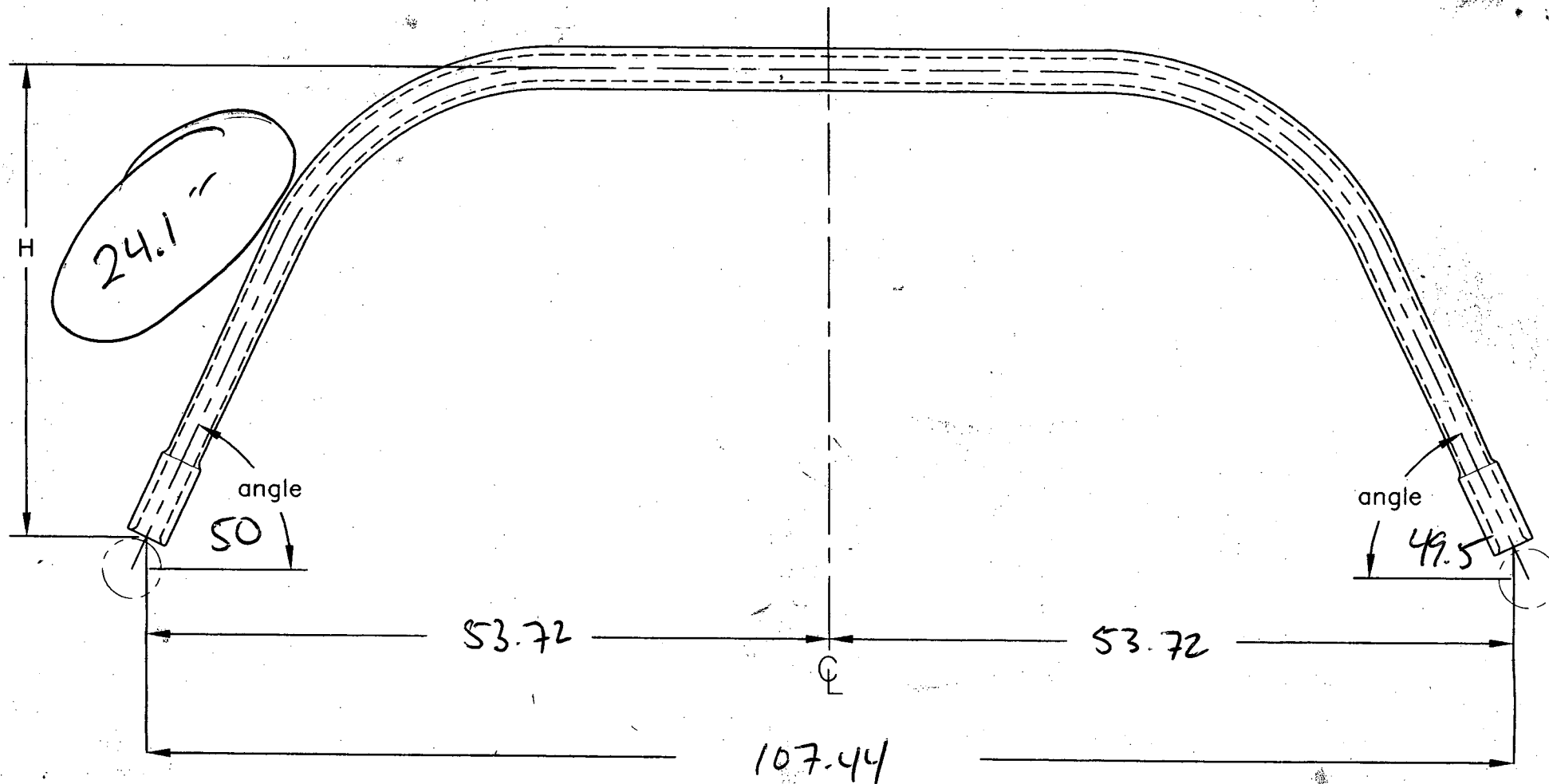
W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



DATE: 06-07-05

DESCRIPTION: 412-664-203

BATCH NO: 27388

DRAWING: 412-664-243 R-B

H: 24.37 }  $\pm .060$

1/2 SPAN: 53.72

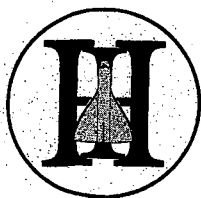
TOTAL SPAN: 107.44

ANGLE:  $50^\circ$

*B. Q. Smith*

*J.*  
06-07-05

Height  
to low by .240



# HeathAir

INTERNATIONAL (1991) INC.

681 Ave. Lepine, Dorval, Québec H9P 1G3  
Tél.: (514) 636-1000 • Fax: (514) 636-0031

W.O. N° 34915

A.M.O. Number: 46/90

## NON-DESTRUCTIVE TESTING REPORT

### AIRCRAFT / COMPONENT INFORMATION

REGISTRATION:

MODEL/TYPE:

SERIAL NUMBER:

TOTAL HR/LDG:

OPERATED BY:

BASED AT:

### INSPECTION REQUIREMENTS

Carry out FPI of four (4) cross tube (external surface) as per ASTM E-1417-05 and the Dart QSI 038, Section 4.1.1 (on file at client) - parts delivered to HeathAir.

Qty. (2) P/N D206-667-103

S/N's B28366 & B28365

Qty. (1) P/N D412-664-203

S/N B27388

Qty. (1) P/N D212-664-201

S/N B26243



RADIOGRAPHY



ULTRASONIC

☒ PENETRANT



MAGNETIC PARTICLE



EDDY CURRENT

### INSPECTION REPORT

Fluorescent penetrant inspection was performed in accordance with the above requirements on four (4) cross tubes.

Note: A Level 3 penetrant was substituted for the requested Level 2 (3 is more sensitive)

Ardrox 970P25E Batch #04B503.

Four (4) cross tubes PASSED inspection.

~~THE MAINTENANCE DESCRIBED ABOVE HAS BEEN PERFORMED IN ACCORDANCE WITH~~  
~~THE APPLICABLE STANDARDS OF AIRWORTHINESS~~

INSPECTED BY: 

DATE September 21, 2006

INSPECTION  
STAMP(S)

Not Required

### CUSTOMER INFORMATION

CUSTOMER: Dart Aerospace

P.O. NUMBER

00002059

ADDRESS:

CONTACT NAME:

LABOUR

@

MATERIALS

@

TRAVEL EXPENSES

@

HOTEL EXPENSES

@

\$

GST

PST

INVOICE NO.

TOTAL \$

WHITE COPY - INSPECTION FILE • YELLOW COPY - CUSTOMER • PINK COPY - ACCOUNTANT